

**Microstructural morphology of *Opuntia* (Cactaceae) species based on scanning electron microscopy**

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*Opuntia* species can be difficult to delineate morphologically. They exhibit a high degree of phenotypic plasticity in macro-morphology, which appears highly correlated with environmental variation. The micro-morphological characteristics of three eastern *Opuntia* species were examined using scanning electron microscopy techniques. It was hoped that different taxa would demonstrate divergent characteristics in overall morphology based on areolar wool, glochid arrangement, pollen structure, and seed and spine surface patterns and micro-surficial morphology. *Opuntia humifusa* (Raf.) Raf. and *O. pusilla* (Haw.) Haw. were the most similar among all of the species investigated. A putative hybrid showed the same features as the proposed parental taxa, *O. humifusa* and *O. pusilla*. *Opuntia* aff. *grandiflora* Engelm. was dissimilar to *O. humifusa* or *O. pusilla* in having larger pollen grains with more germinal pores. Also, *O. aff. grandiflora* spine tips lacked the degree of retrorse barbs present in the other two.